

# NewsRelease



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## **Langley using 'flying simulator' that mimics flight of other planes**

NASA Langley is using an Air Force research aircraft to test a "windowless cockpit" as part of the agency's effort to develop the technology for a next-generation supersonic passenger plane.

The Air Force Total In-Flight Simulator (TIFS) is scheduled to be at NASA Langley until Jan. 29. News media may tour the plane at NASA from 4 to 5 p.m. Friday, Jan. 22.

The flying simulator is a Convair NC-131H with a research cockpit grafted to its nose. Using on-board computers running simulation models of the aircraft researchers want to test, the Convair can be made to actually handle like that airplane.

"The simulation computers directly control the aircraft's control surfaces to produce the 'look' and 'feel' of the aircraft being simulated," said Lou Glaab, of NASA Langley's Flight Dynamics and Control Division.

The 90-foot Convair will be programmed to behave like a 300-foot supersonic airliner, the High-Speed Civil Transport being developed by NASA and the aerospace industry. The Convair will simulate the concept plane's flying qualities during low-speed approaches and landings.

The flight test "represents an extremely high-fidelity simulation of the conceptual High-Speed Civil Transport," said Glaab.

One aspect of the test will evaluate the eXternal Visibility System being proposed for the high-speed airplane, allowing it to be flown "windowless" using electronic displays. This will remove the need to droop the nose of the aircraft, like the Concorde does during takeoff and approach, resulting in significant savings in weight, cost and mechanical complexity.

The Air Force Convair was extensively modified to accommodate the test flights, receiving a new cockpit canopy and nose cap; instrument panel; side and center consoles; rudder pedal and

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throttle feel systems; and various sensors, displays and instrumentation, including a Silicon Graphics computer and high-definition TV camera and displays.

NASA Langley's B-200 King Air airplane will provide air traffic for the Convair flight tests. Calspan Corp. of Buffalo operates the Convair for the Air Force.

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